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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,488	09/26/2003	Thomas J. Smith	60680-1792	8253

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EXAMINER

PATEL, VISHAL A

ART UNIT PAPER NUMBER

3673

DATE MAILED: 11/15/2005

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/672,488
Filing Date: September 26, 2003
Appellant(s): SMITH, THOMAS J.

Thomas Smith
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 9/19/05 appealing from the Office action mailed 1/10/05.

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(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings, which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

NEW GROUND(S) OF REJECTION

Claims 1-9, 12-14 and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Umezawa (US. 3,671,047) in view of Coatings Technology Handbook (Referred to as CTH and see IDS filed on March 02, 2005, CB).

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

The statement of the evidence in the brief is correct.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-9, 12-14 and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Umezawa in view of Benson et al (US. 5,829,240).

Regarding claims 1, 6-9 and 12-14: Umezawa discloses a piston ring having a chromium coating (8) on surfaces (upper, lower and inner surfaces) and a second coating on another surface (coating 9) but fails to disclose that the first coating is a nodular thin dense chromium. Benson discloses a sliding surface having a nodular thin dense chromium coating produced by Armoloy process (column 4, lines 50-60). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the chromium of Umezawa to be nodular thin dense chromium coating as taught by Benson to provide a strong and durable coating (column 2, lines 55 to column 3, line 21 and particularly line 5-6 of column 3).

Regarding claims 2-5 and 16-18: Umezawa discloses the claimed invention except that the first coating has hardness of at least 70 on the Rockwell "C" hardness scale, thickness to be between 0.002 to 0.003, withstands temperatures of about -400 to about 1600 degrees F and has

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a static coefficient of friction of about 0.12. Discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Without the showing of some unexpected result. Since applicant has not shown some unexpected result the inclusion of this limitation is considered to be a matter of choice in design. It would have been obvious to one having ordinary skill in the art at the time the invention was made to produce the first coating with hardness of at least 70 on the Rockwell "C" hardness scale, thickness to be between 0.002 to 0.003, withstands temperatures of about -400 to about 1600 degrees F and with a static coefficient of friction of about 0.12 as a matter of design choice.

Furthermore evidence is produced by applicant that Armoloy process will produce the following: hardness of 70 on the Rockwell "C" (page 4 paragraph 17), a static coefficient (see page 5, paragraph 20), thickness to be 0.0002 to 0.0003 (see page 4 paragraph 15) and withstand temperatures of -400 to 1600 degrees F (page 5, paragraph 19).

NEW GROUND(S) OF REJECTION

3. Claims 1-9, 12-14 and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Umezawa (US. 3,671,047) in view of Coatings Technology Handbook (Referred to as CTH and see IDS filed on March 02, 2005, CB).

Umezawa discloses a piston ring having coatings of chromium (surfaces 5, 6 and 7 have a chromium coating) and an outer surface of the piston ring has a second coating (9). Umezawa discloses the invention substantially as claimed above but fails to disclose that the chromium is a nodular thin dense chromium. CTH teaches a coating that is nodular thin dense chromium and is used in automotive industry and for engine parts (see pages 237-241 of the CTH). It would have

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been obvious to one having ordinary skill in the art at the time the invention was made to have the chromium of Umezawa to be nodular thin dense chromium having a hardness of 70 Rc, a thickness of 0.0002" to 0.0003", a hardness of 70 on Rc scale and withstands high and low temperatures as taught by CTH, to produce a coating with a lasting bond and does not chip, flake, crack and peel (See Coatings Technology Handbook page 237).

(10) Response to Argument

In response to applicant's argument that Benson is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case the Benson art is not in the field of endeavor but reasonably pertinent to the particular problem with which the applicant was concerned, i.e. better chromium coating. Furthermore the reference of Benson is in the field of coating surfaces and has provided motivation that using a nodular dense chromium provides a stronger and more durable coating (column 2, lines 55 to column 3, line 21, particularly lines 5-6 of column 3 of Benson).

Applicant has argued that the combination of Umezawa and Benson lacks motivation or suggestion to combine the references is not persuasive because as pointed out by Benson that having a nodular dense chromium coating provides coatings that are more durable and stronger (column 3, lines 5-6 of Benson).

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on

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obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). Furthermore as pointed out above that Benson provides motivation to used a nodular dense chromium coating (see above two paragraphs) on bearing or contacting surfaces.

As stated in the rejection that the reference of Umezawa discloses a piston ring having a first coating of chromium on three surfaces and a second coating on a fourth surface and CTH discloses that the chromium is a nodular thin dense chromium to provide a chromium coating that does not chip, flake, crack and peel.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Conclusion

This examiner's answer contains a new ground of rejection set forth in section (9) above. Accordingly, appellant must within **TWO MONTHS** from the date of this answer exercise one of the following two options to avoid *sua sponte* **dismissal of the appeal** as to the claims subject to the new ground of rejection:

(1) **Reopen prosecution.** Request that prosecution be reopened before the primary examiner by filing a reply under 37 CFR 1.111 with or without amendment, affidavit or other

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evidence. Any amendment, affidavit or other evidence must be relevant to the new grounds of rejection. A request that complies with 37 CFR 41.39(b)(1) will be entered and considered. Any request that prosecution be reopened will be treated as a request to withdraw the appeal.

(2) Maintain appeal. Request that the appeal be maintained by filing a reply brief as set forth in 37 CFR 41.41. Such a reply brief must address each new ground of rejection as set forth in 37 CFR 41.37(c)(1)(vii) and should be in compliance with the other requirements of 37 CFR 41.37(c). If a reply brief filed pursuant to 37 CFR 41.39(b)(2) is accompanied by any amendment, affidavit or other evidence, it shall be treated as a request that prosecution be reopened before the primary examiner under 37 CFR 41.39(b)(1).

Extensions of time under 37 CFR 1.136(a) are not applicable to the TWO MONTH time period set forth above. See 37 CFR 1.136(b) for extensions of time to reply for patent applications and 37 CFR 1.550(c) for extensions of time to reply for ex parte reexamination proceedings.

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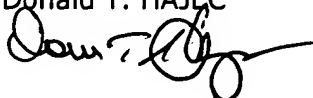
Respectfully submitted,

Vishal Patel



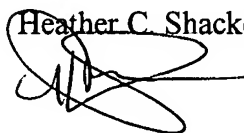
A Technology Center Director or designee must personally approve the new ground(s) of rejection set forth in section (9) above by signing below:

Donald T. HAJEC



Conferees:

Heather C. Shackelford



Alison K. Pickard

